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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/682,895 | 10/30/2001 | Peter M .Gulvin | 109177 | 2331 |

27074 7590 08/13/2003

OLIFF & BERRIDGE, PLC.
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

SORKIN, DAVID L

| ART UNIT | PAPER NUMBER |
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1723

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,895

Applicant(s)

GULVIN, PETER M

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 25-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-32 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 May 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Election/Restrictions***

1. Applicant's election with traverse of claims 1-24 in Paper No. 5 is acknowledged. The traversal is on the grounds that Group I is not distinct from Group II. Particularly, applicant refers to claims 9 and 11 of Group I not being distinct from Group II. However, claims 1-17 all require "a plurality of micromachined layers formed over a substrate", whereas the method of Group II does not require any layer formed over a substrate and could be practiced with a single "layer" filter. While applicant mentions the fact that apparatus claims 9 and 11 discuss an intended use in which fluid flow is such that the filter is "downstream", applicant is advised that "the manner or method in which such machine is to be utilized is not germane to the issue of patentability of the machine itself" *In re Casey*, 152 USPQ 235 (CCPA 1967). Regarding the distinction between Group I and Group III, the apparatus/product of Group I could be made without the "sacrificial layer" and "removing the sacrificial layer" required by Group III, for example if the holes are formed by laser ablation or etching away the tracts of heavy ions, or if a mask pattern and all other layers are left as part of the final product and not removed.

The requirement is still deemed proper and is therefore made FINAL.

Information Disclosure Statement

2. Regarding the documents referred to in the specification, but not listed on the IDS filed 21 March 2003, the listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP

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§ 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description: "250" and "450". A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. In paragraph [0043], the listed Attorney Docket Numbers should be replaced by appropriate Application Numbers.

5. The disclosure is objected to because it states in paragraph [0049] that "As shown in Fig. 2, a pre-filter 250 may be added", whereas no "pre-filter 250" is shown in Fig. 2.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Guckel et al. (US 4,897,360). Regarding claim 1, Guckel ('360) discloses a micromachined

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filter system comprising a microdevice having a plurality of layers (61, 63) formed over a substrate (60); and a micromachined filter integrated into at least one (63) of the layers (see col. 13 lines 5-66). Regarding claim 2, the at least one of the micromachined layers (63) is a polysilicon layer (see col. 13, lines 5-13). Regarding claim 3, the microdevice comprises a plurality of micromachined layers (63, 61, 60) and wherein the micro-machined filter is integrated in at least two of the plurality of micromachined layers (See Figs. 21-23 and col. 13, lines 30-66, noting that layer 63 includes smaller filter openings, while layers 61 and 60 include larger filter openings). Regarding claim 4, the micromachined filter comprises a first grid (that of layer 63) of intersecting beams and a first plurality of holes (67) separating the beams formed in a first micromachined layer (63); and a second grid (that of layer 61) of intersecting beams and a second plurality of holes separating the beams formed in a second micromachined layer (61) that is adjacent the first micromachined layer, the first and second grids being at least partially offset so that first and second pluralities of holes are at least partially offset (see Figs. 21-23). Regarding claim 5, the micromachined filter comprises a grid of intersecting beams and a plurality of holes (67) separating the beams (see Figs. 22 and 23). Claim 6 recites "each of the holes has a width of about 1 nanometer to about 500 microns". This numerical range is anticipated by the example of "4 microns" disclosed in col. 13, lines 41-42 of the reference. A specific prior art example within a claimed numerical range anticipates the claimed range. See *Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985). Claim 7 recites "each of the holes has a width of about 1 micron to about 500 microns". This numerical range is anticipated by the example of

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"4 microns" disclosed in col. 13, lines 41-42 of the reference. Claim 8 further recites "each of the holes has a width of at least about 1 micron". This numerical range is anticipated by the example of "4 microns" disclosed in col. 13, lines 41-42 of the reference. Regarding claim 9, the micro-device has a fluid inlet through the substrate (at bottom in Fig. 21) and the micro-filter is situated downstream of the fluid inlet. Regarding claim 10 the micromachined filter is situated over the fluid inlet (see Fig. 21). Regarding claim 11, Guckel ('360) discloses a micromachined filter system comprising a microdevice having a plurality of layers (61, 63) formed over a substrate (60) and a fluid inlet (at bottom in Fig. 21); and a micromachined filter (that including holes 67 of layer 63) integrated into the micro-device downstream of the fluid inlet (see Fig. 21; col. 13 lines 5-66). Regarding claim 12, the micromachined filter comprises a series of substantially parallel beams (for example those defining holes 67, see Figs. 22 and 23). Regarding claim 13, the micromachined filter comprises a series of substantially parallel columns (for example those defining holes 67, see Figs. 22 and 23). Regarding claim 14, the micromachined filter comprises a first series of substantially parallel beams and a second series of substantially parallel beams, the first and second series of beams being substantially parallel and at least partially offset to one another (for example the first and second series may be considered subsets of parallel beams defining holes 67 within a given square 73 or sets of parallel beams in two separate squares 73, see Figs. 22 and 23). Regarding claim 15, the micromachined filter comprises a first series of substantially parallel beams and a second series of substantially parallel beams (for example those defining holes 67), the first and second series of beams being

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substantially non-parallel (generally perpendicular in Figs. 22 and 23) to one another (see Figs. 22 and 23). Regarding claim 16, the micromachined filter comprises a grid (that of layer 63) of intersecting beams and a plurality of holes (67) separating the beams (see Figs. 22 and 23). Regarding claim 17, the micromachined filter comprises a first grid (that of layer 63) of intersecting beams and a first plurality of holes (67) separating the beams formed in a first layer (63); and a second grid (that of layer 61) of intersecting beams and a second plurality of holes separating the beams formed in a second layer (61) that is adjacent the first layer, the first and second grids being at least partially offset so that first and second pluralities of holes are at least partially offset (see Figs. 21-23). Regarding claim 18, Guckel ('360) discloses a filter comprising a micromachined layer of polysilicon (see col. 13, lines 5-66 where layers 63 and 64 are disclosed to be polysilicon). Regarding claim 19, the micromachined layer (63) of polysilicon comprises a series of substantially parallel beams (those defining holes 67, see Figs. 22 and 23). Regarding claim 20, the micromachined layer (63) of polysilicon comprises a series of substantially parallel columns (for example those defining holes 67, see Figs. 22 and 23). Regarding claim 21, the micromachined layer (63) of polysilicon comprises a first series of substantially parallel beams and a second series of substantially parallel beams, the first and second series of beams being substantially parallel and at least partially offset to one another (the first and second series may be considered subsets of parallel beams defining holes 67 within a given square 73 or sets of parallel beams in two separate squares 73, see Figs. 22 and 23). Regarding claim 22, the micromachined layer (63) of polysilicon comprises a first series of substantially

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parallel beams and a second series of substantially parallel beams (for example those defining holes 67), the first and second series of beams being substantially non-parallel (generally perpendicular in Figs. 22 and 23) to one another (see Figs. 22 and 23).

Regarding claim 23, the micromachined layer (63) of polysilicon comprises a grid of intersecting beams and a plurality of holes (67) separating the beams (see Figs. 22 and 23). Regarding claim 24, it is noted that the broadest reasonable interpretation consistent with the instant specification of the term "adjacent" layers is considered to include situations where other layers and/or empty space is between the "adjacent" layers, because according to the instant specification, the "adjacent" polysilicon layers have a silicon dioxide sacrificial layer interposed therebetween. See for example paragraph [0066] of the instant specification. Therefore it is considered that Guckel ('360) discloses a micromachined layer of polysilicon comprises a first grid (that of layer 63) of intersecting beams and a first plurality of holes (67) separating the beams formed in a first layer (63); and a second grid (that of layer 64) of intersecting beams and a second plurality of holes separating the beams formed in a second layer (64) that is adjacent the first layer, the first and second grids being at least partially offset so that first and second pluralities of holes are at least partially offset (see Figs. 21-23).

Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

A handwritten signature in cursive script, appearing to read "David Sorkin".

David Sorkin

August 5, 2003